REMARKS

Applicants' attorney is appreciative of the interview granted by Examiners Vu and Wong to the undersigned and to Applicants' representative Deborah Gador on February 14, 2007. At that interview, extensive discussions were carried out relating to the definition of "services" according to the present application, and the differences between that definition and the concept of services in the prior art references.

The services of the invention, for example, TDM, ATM, Ethernet, Fibre Channel, PDH, Frame Relay, etc., are known as *native services* and are defined by their bit rate and protocol structure.

Additional examples of native services, each having its own bit rate and protocol, are set forth in the definition of "Pseudowire" in Wikipedia (copy attached hereto), as follows: " Pseudowire (PW) is an emulation of a native service over a Packet Switched Network (PSN). The native service may be ATM, Frame Relay, Ethernet, low-rate TDM, or SONET/SDH, while the PSN may be MPLS, IP (either IPv4 or IPv6), or L2TPv3." Thus, this usage of the term "services" is well known in the art.

At present, each of these types of services requires its own protocol and its own network, because there is no known method of mixing ATM with TDM and/or with packets for transmission together. Instead, if different services are to be transmitted together, one or both must be converted or transformed to a new protocol.

The present invention relates to a method which permits mixing of these different types of services, in their original protocols, without conversion or transformation for transmission together. Such a method is not taught or suggested in any of the cited art cited or known to the Applicant. As discussed at the interview, claims 1 and 5 have

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been amended to better define the particular services of the invention.

Claims 1-3, 14, 30 and 31 have been rejected under 35 USC 103(a) as being unpatentable over Tiernan et al (US 6172988). In particular, the Office Action alleges that Tiernan discloses collecting services data in their original protocols, which are interpreted as being formats of video and audio.

However, as described above, and as claimed in amended claims 1 and 5, the term "services" as used in the present claims does not include video and audio, *which are not services according to the definition*. Rather, the video, audio and data streams of Tiernan et al fall under the definition of an *Internet packet-based (IP) service*, as far as the present invention is concerned. Accordingly, Tiernan et al is directed to transmission of a single service, and not a plurality of services, as is the claimed invention. It is therefore submitted that claims 1-3, 14, 30 and 31 are allowable over Tiernan et al, and withdrawal of this rejection is requested.

Claims 21, 23, 24 have been rejected under 35 USC 103(a) as being unpatentable over Tiernan et al in view of US2002/0019879 to Jasen et al. The reference to Tiernan et al has been distinguished above.

The invention utilizes a tag to identify a source and destination which, in effect, indicate the type of service (i.e., TDM services come from and go to a TDM network). However, the use of a tag is not being claimed *per se,* but only in connection with the novel method of claim 1 or claim 5, and conventional tags can be utilized in the present invention. Furthermore, Jasen et al do not teach or suggest processing different data services in their original protocols into packets.

Withdrawal of this rejection is requested.

Claims 22, 25, 27 and 29 have been rejected under 35 USC 103(a) as being unpatentable over Tiernan et al in view of Jasen et al. and further in view of Ku et al. The Office Action alleges that Ku et al discloses encapsulating tagged packets into PoS frames.

The combination of Tiernan and Jasen has been discussed above. Ku et al. also refers to only one type of services data, namely packet-based services, which are switched (not transmitted) via a switch, operating as a store-and-forward device, the packets being mapped onto discrete time slots. Paragraphs [0004] to [0010] of Ku provide a very good discussion of the different types of services and the difficulties of combining them together. His solution involves switching, not transmission, and does not include multiplexing the services. Thus, Ku does not teach or suggest combining data services of different types for transmittal together, as taught by the claimed invention. In any event, Applicants are not claiming encapsulation and decapsulation, *per se*, but only in connection with the novel method of claim 1.

Withdrawal of this rejection is requested.

Claims 5, 8, 12 and 15-19 have been rejected under 35 USC 103(a) as being unpatentable over Tiernan et al in view of Ku et al. The Office Action alleges that in paragraph [0060], Ku discloses segmenting an incoming bit stream.

It is respectfully submitted that this paragraph says nothing about segmenting a bit stream, but discusses adding MPLS labels to IP packets. The combination of Tiernan et al and Ku et al, as discussed above, does not disclose or suggest the novel method of segmenting bit streams of services data of different types of services to form novel packets of services in their native protocols, as recited in claim 5.

There is nothing in any of the cited prior art that would

have made it obvious to a person of ordinary skill in the art to include segmenting an incoming bit stream of services data in its original (native) protocol for transmission in a packet together with data of another service, as described and claimed in the present application and explained in the interview.

Withdrawal of this rejection is requested.

Claim 9 has been rejected under 35 USC 103(a) over Tiernan et al and Ku et al, further in view of Martin, claims 10 and 20 have been rejected under 35 USC 103(a) over Tiernan et al and Ku et al, further in view of Farhan, and claim 11 has been rejected under 35 USC 103(a) over Tiernan et al and Ku et al, further in view of Chesler et al.

These claims all depend from amended claims 1 or 5, and are submitted to be allowable for the reasons discussed with respect to claims 1 and 5. Withdrawal of these rejections is requested.

As discussed in the interview, the Examiners indicated that the term "appropriate" is indefinite, and claims 2, 12, 17, 19 and 25 have been amended to utilize more definite terminology.

The provisional double patenting rejection over Serial No. 09/753,513 is assumed to remain, and Applicants will deal with the rejection when allowable subject matter is identified.

In view of the foregoing amendments and remarks, Applicants submit that the present application is now in condition for allowance. An early allowance of the application with amended claims is earnestly solicited.

Respectfully submitted,

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Pseudo-wire

From Wikipedia, the free encyclopedia
(Redirected from Pseudowire)

In computer networking and telecommunications, a **Pseudowire** (PW) is an emulation of a native service over a Packet Switched Network (PSN). The native service may be ATM, Frame Relay, Ethernet, low-rate TDM, or SONET/SDH, while the PSN may be MPLS, IP (either IPv4 or IPv6), or L2TPv3.

The PW emulates the operation of a "transparent wire" carrying the native service, but it is realized that this emulation will rarely be perfect.

The first PW specifications were the Martini draft for ATM PWs, and the TDMoIP draft for transport of E1/T1 over IP.

In 2001, the IETF set up the PWE3 working group, which was chartered to develop an architecture for service provider edge-to-edge PWs, and service-specific documents detailing the encapsulation techniques. Other standardization forums, including the ITU and the MFA Forum, are also active in producing standards and implementation agreements for PWs.

There are now many PW standards, the most important of which are IETF RFCs 3985 (PWE architecture), 4447 (PWE control protocol), 4448 (Ethernet PW), and 4553 (SAToP TDM PW), as well as ITU-T Y.1411 through Y.1415, Y.1452 and Y.1453 (ATM, TDM, voice services, and Ethernet PWs), and X.84 (frame relay PW).

External link

- http://www.ietf.org/html.charters/pwe3-charter.html

Retrieved from "http://en.wikipedia.org/wiki/Pseudo-wire"

Category: Network architecture